SIEMENS

SIMOMED HM

AX

Service Instructions

SIMOMED

44 cm / 54 cm Monitor

44 cm Monitor Part No. 37 92 079 X2077
54 cm Monitor Part No. 37 92 087 X2078
54 cm Monitor Part No. 74 11 726 X2078

© Siemens AG 1996
The reproduction, transmission or use of this document or its contents is not permitted without express written authority. Offenders will be liable for damages. All rights, including rights created by patent grant or registration of a utility model or design, are reserved.

Print No.: RA52-060.061.01.07.02
Replaces: RA52-060.061.01.06.02

English
Doc. Gen. Date: 07.02

Document revision level

The document corresponds to the version/revision level effective at the time of system delivery. Revisions to hardcopy documentation are not automatically distributed.

Please contact your local Siemens office to order current revision levels.

Disclaimer

The installation and service of equipment described herein is to be performed by qualified personnel who are employed by Siemens or one of its affiliates or who are otherwise authorized by Siemens or one of its affiliates to provide such services.

Assemblers and other persons who are not employed by or otherwise directly affiliated with or authorized by Siemens or one of its affiliates are directed to contact one of the local offices of Siemens or one of its affiliates before attempting installation or service procedures.

Table of Contents 3

1 General Remarks 4

General Information 4
Safety Information 4
Product-specific Remarks. 5
Remarks Regarding the Monitor 5
Adjustment 5
Troubleshooting / Repair / Replacement 6
Test Equipment and Aids 6

2 Basic Adjustments without the PC 8

Front Key Panel Operation 8

3 Service User Interface 10

Initial Installation of the Service Program 10
Starting Installation of the Service Software 10

4 Replacing the Firmware 11

FW Replacement 11

5 Configuration with Monitor Replacement 12

Application-relevant Configurations 12
Blocking/Enabling the Front Panel Keys 12
Brightness and Contrast Adjustment (Front Keys) 12
Power Down and Ambient Light Sensor 12
Norm Change Time. 13
Size / position and 1:1 / 3:4 format relative to the application. 13
Jumper Configuration (Hardware). 15

6 Adjusting the Max. Brightness/Contrast 18

Adjusting the Video Amplifier 18
General Remarks 18
Adjustment 19

7 Changes to Previous Version 23

General Information

Safety Information

The DHHS regulations have been met in this monitor under the following circumstances:

- No components may be replaced on the board level and no adjustments (potentiometers) may be made in the power supply (with high voltage)!

  Exception: when a modification or upgrade is initiated by an AUI, etc.

- Line power is present at the heat sink of the power supply to the frame, there is a risk of contact if the monitor is opened, even in the standby mode!

⚠WARNING

When handling the monitor, there is a risk of implosion of the picture tube!

If not observed, death or serious bodily injury can occur.

➪ **The required protective clothing must be worn.**

Product-specific Remarks

Remarks Regarding the Monitor

- The SIMOMED HM monitor recognizes the particular TV scan norm (only H scan norm) and automatically switches to it. If a norm is used that is not programmed, the monitor automatically recognizes this norm, and it may be necessary to adjust the geometry and contrast/brightness. The "next" time, it will recognize this norm and will assign the parameters that have been set for it.
- If adjustments have to be carried out, they must be carried out in all the scan norms that are programmed for the particular image system/TV.

  Reason: separate EEPROM values are allocated for each norm.
- Repair of the monitor is made beginning / since February 1, 2001 only by completely replacing the monitor!
- Monitor adjustment is made using a laptop computer

  (Basic adjustments can be made using the front key panel (Basic Adjustments without the PC / p. 8).
- The power input is set up for 110 - 230 V +/- 10% 50/60 Hz.
- Occasional high voltage surges =< 2sec. with image disturbances are admissible.
- Cut off:

  Approx. 15 min. after switching power ON, and then every 12 hours, the monitor performs an automatic cut-off adjustment. This cut-off adjustment compensates for aging of the picture tube. During the cut off-adjustment, approx. every 2 sec., the image brightness changes.
- Pass-through output for BAS signal.

  The SIMOMED HM does not have a BAS pass-through output.

  However, if necessary a T-adapter can be used at the BAS input for BAS forwarding. If this is done, the terminal resistor must be opened (Replacing the Firmware / p. 11).

NOTE	**For video norms of > 60 Hz image refresh rate, image quality problems occur when the BAS signal is channeled through. Video norms of 50/60 Hz image refresh rate must have connection cables that are as short as possible for the throughput mode. If there are problems, a video distributor amplifier must be used.**

Adjustment

- Adjustment values, as well as the adjustment procedure are handled only over the help texts in the service user interface.

  Selection is made in the service user interface under <Help>-<Service>.

Troubleshooting / Repair / Replacement

Beginning / since February 2001, the monitor is only replaced completely when there is a malfunction.

- Every defective monitor must be returned with an exact description of the malfunction!
- Without a description of the malfunction, sporadic and/or temperature-related effects or even system-dependent causes almost never can be found.

NOTE

If a middle monitor in an MTS 1 / 3 / 6 needs to be replaced, the position of the monitor to the rear longitudinal strut can be changed so that the monitor can be replaced without "spending extra time" on it.

However, the document

for MTS 1/3/6 (AX52-X01.812.01 / Transverse Strut Horizontal Rotation at the Bottom)

for MTS 6, upper traverse (AX52-X01.812.01 / Turning the Top Horizontal Transverse Strut)

must be observed!

⚠WARNING

Increased risk of injury!

If the installation document is not observed, the traverse can fall and crushing can occur.

➪ **Installation Instructions, AX52-X01.812.01.... absolutely must be observed.**

Test Equipment and Aids

- Laptop with the Windows operating system.
- Serial interface cable (0 modem cable).

  See CB - DOC TD00-000.801.01.... (Spare Parts Catalogue),
  Part No. 99 00 440 RE999.

NOTE

A gender changer is no longer needed.

- Monitor Multinorm Testbox.

  See CB - DOC TD00-000.801.01.... (Spare Parts Catalogue)
  Part No. 97 16 754 Y4905

- Set of Torx offset screwdrivers.

  See CB - DOC TD00-000.801.01.... (Spare Parts Catalogue)
  Part No. 99 00 663 GE999

- Mavo monitor luminous density meter or equivalent device.

  See CB - DOC TD00-000.801.01.... (Spare Parts Catalogue).
- The Help / Adjustment texts in the service user interface can be found on the supplied service diskette under <Help>-<Service>.

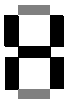
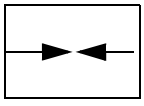
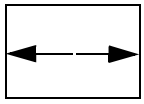
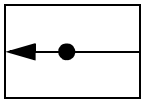
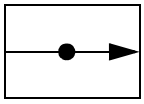
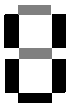
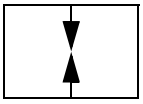
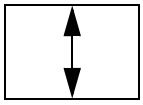
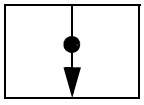
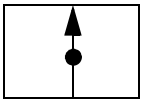
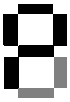
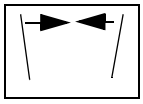
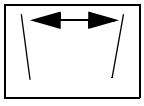
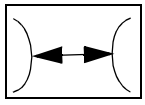
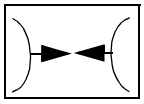
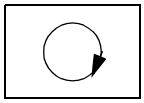
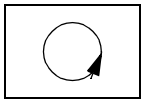
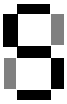
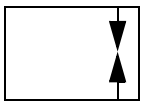
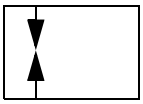
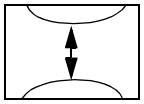
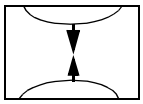
Front Key Panel Operation

The following adjustments can be made without using the Service PC by using the front panel keys, as long as these keys have been enabled by the service user interface.

Beginning with firmware Version 01.40, a cutoff can be started when the service key is blocked (status when shipped) by pressing the service key.

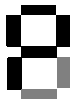
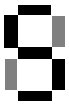
It is necessary that the time requirement (20 min. after switching on power) be met.

- The adjustment functions can be keyed through, one after the other, using the service key; the parameters can be changed using the keys for brightness and contrast +/-.
- If the adjustment mode has been selected with the service key and no entry is made in approx. 30 sec., the symbol in the 7-segment display begins to blink. While it is blinking, or even before this, the old value can be reset by briefly selecting the power key. When the symbol blinks for approx. 5 sec., the 7-segment display goes out and the new parameters are stored as default parameters!
- If the adjustment range is exceeded, the top or bottom lines in the 7-segment display will blink.

Adjustment function	7-segment display	Contrast -	Contrast +	Bright-ness -	Brightness +
H - Geometry					
V - Geometry					
E / W Amplitude					
Rotation H-Parallelogram					Static Focus Press Brightness + and Contrast - or + (at same time) to adjust focus.
N/S Amplitude					

- A second level can be selected by pressing the key combination contrast**-** and the service key.

- The function and operation of this level is the same as the previous level. When the adjustment function is selected, the 7-segment display switches between a function display and the adjustment value (off /on).

Adjustment function	7-segment display	Contrast -		Contrast +			
Powerdown			On		Off		
Ambient light sensor			On		Off		

- Beginning with FW 1.74 (shipped since approx. middle of ’99), keyboard blocking can be activated or deactivated by simultaneously pressing the H + and H - keys, four times in succession.

Initial Installation of the Service Program

- Insert the supplied service diskette in the disk drive.
- Select drive A in the Windows file manager.
  - Double-click on the "setup.exe" file to start the program; the installation routine will install the service software in the service window. If a service window is not yet installed, it will be installed automatically.
  - Select the language (English or German), select the Continue button.
  - Confirm the installation from drive A by clicking on Continue.
  - Confirm installation after C:SIM_HM by clicking on Continue.
  - Confirm the Service program group by clicking on Continue.
  - Close the window which displays successful installation by clicking on OK.

Starting Installation of the Service Software

- Installation of the Service Software is started in the Windows service window by double-clicking on the monitor symbol.
- Com 1 is selected as the default port. If a connection is not made, the Com port can be reselected in a window which appears, or the off-line mode can be selected.

NOTE

For an explanation of the masks or of individual functions in a mask, a help text can be selected in the masks by clicking on a question mark button.

FW Replacement

- Unplug the power connector.
- The FW is located on the digital controller.
- The digital controller is located behind the front control panel.
- Unlatch the front control panel (on both sides) using the unlatching tool that is included in the shipment, and flip it down.
- Disconnect the ribbon cable from the digital controller to the monitor.
- Remove the metal shielding (2 screws).
- Replace the FW.
- **Installation** is in the reverse order of the steps above.

Fig. 1:

NOTE

Insert the screw inserted in plastic as follows:

Turn the screw counterclockwise until it snaps in place, only then turn it clockwise to tighten it.

Application-relevant Configurations

When replacing a SIMOMED HM monitor, the following configurations must be checked in the service software, relative to the application.

Blocking/Enabling the Front Panel Keys

In this window, all front panel keys that can be operated can be individually blocked/enabled.

In the SSW, select under: => Configuration =>Lock membrane key switch

Application	Setting
All (except Magic View)	All front keys => ... off
Magic View	• Brightness / contrast / service => ... off • Power => ...on

Brightness and Contrast Adjustment (Front Keys)

NOTE

The video amplifier adjustment must be adjusted prior to adjusting the brightness / contrast, see (Adjusting the Video Amplifier / p. 18).

For adjustment and selection, see: (Brightness / Contrast Adjustment using the Front buttons or in the SSW / p. 21).

NOTE

If an adjustment of brightness / contrast must / should be made while the front panel keys are blocked, beginning with FW 1.74 (shipments beginning approx. mid '99), this can be done as follows:

By simultaneously pressing the brightness + and brightness - keys 4x in sequence, key blocking can be deactivated or activated. This means that the values can be changed without a laptop.

Power Down and Ambient Light Sensor

The power down mode and the ambient light sensor can be activated and deactivated in this window. Power down & Ambient light sensor

In the SSW, select under: => Configuration =>Power down & Ambient light sensor

- Power down mode on means: if the BAS signal is missing, the monitor goes into stand-by, and when the BAS signal is present again, the monitor switches back on.

- Ambient light sensor on means: if the ambient light sensor is activated, the contrast of the monitor is readjusted according to the ambient light. Control is in the range between the contrast setting (front control panel) and max. contrast setting in the SSW.

Application	Power Down	Ambient Light Sensor
All (except Magic View)	off	see corresponding IQAP / IQ specifications
Magic View	on	off

NOTE

The behavior of the ambient light sensor can be adjusted.

Adjustment is made in the SSW under: => Adjustment => Ambient light sensor

We always use the "Default 1" values in this screen.

Norm Change Time

In this window, the delay time when there is a norm change can be adjusted.

Function: if the current video norm is changed, the monitor waits the time that has been set before it starts a norm search routine and again correctly displays the new norm. If there are instable video sources, "unwanted" norm changes and image flicker can be prevented by extending the norm change time.

In the SSW, select under: => Configuration => Scan Update time

Size / position and 1:1 / 3:4 format relative to the application.

Size / Position

NOTE

The size / position must be adjusted under => Adjustment => Geometry

correctly displayed.

It must be ensured that a square is also displayed square.

Example, SMPTE test pattern:

The 5 horizontal boxes must have the same display length as the 5 vertical boxes on the screen (measure using a ruler, etc.).

1:1 / 3:4 Format

In this window, the format musts be manually configured to 1:1 or 3:4 for certain applications **(see the list - blocked Norm**). Manual selection is required because the monitor cannot detect the format from the video signal.

In the SSW, select under: => Configuration=> Disable Scan

System	Norm Used	Blocked Norm (black background)
Hicor / ACOM 50Hz	Norm 12 (1249 lines/100Hz/4:3)	Norm 11(2497 lines/100Hz/1:1)
HICOR / ACOM 60Hz	Norm 8 (1023 lines/120Hz/4:3)	Norm 7 (2045Hz/120Hz/1:1)
HICOR 50Hz Bypass (!)	Norm 5 (1249 lines/50Hz/1:1)	n.a.
HICOR 60 Hz Bypass (!)	Norm 1 (1023 lines/60Hz/1:1)	n.a.
Multistory TOP Neurotic TOP AngiostarTOP	Norm 10 (2251 lines/120Hz/3:4)	n.a.
MST TOP / NST TOP / AST TOP => in Bypass (!)	Norm 3 (1125 lines/60Hz/1:1)	n.a.
Fluorospot TOP 1K AXIOM Artis	Norm 2 (1066 lines/72Hz/5:4)	n.a.
Fluorospot TOP 2K	Norm 9 (1066 lines/76Hz/5:4)	n.a.
Fluorospot TOP Bootup (!)	Norm 1 (1023 lines/60Hz/1:1)	n.a.
Fluorospot Compact	Norm 2 (1066 lines/72Hz/5:4)	n.a.
Leonardo	Norm 2 (1066 lines/72Hz/5:4)	n.a.
Fluorospot H 50Hz	Norm 5 (1249 lines/50Hz/1:1)	n.a.
Fluorospot H 60Hz	Norm 1 (1023 lines/60Hz/1:1)	n.a.
Multistar KK without display 2000 50Hz	Norm 5 (1249 lines/50Hz/1:1)	n.a.
Multistar KK without display 2000 60Hz	Norm 1 (1023 lines/60Hz/1:1)	n.a.
Multistar KK with display 2000 50Hz	Norm 1 (12497 lines/100Hz/1:1)	Norm 12 (1249 lines/100Hz/4:3)

System	Norm Used	Blocked Norm (black background)
Multistar KK with display 2000 60Hz	Norm 7 (2045 lines/120Hz/1:1)	Norm 8 (1023 lines/120Hz/4:3)
AXIOM Artis Bypass (!)	Norm 3 (1125 lines/60Hz/1:1)	n.a.

Jumper Configuration (Hardware)

NOTE

If one of the jumper positions described below is changed, the monitor must be disconnected from line power!

Jumpers for Monitor Size

Behind the front plane, on the digital controller, there are two jumpers:

- X11 => configuration of the monitor size. Incorrect configuration leads to the error: EEPROM (in this case, re-position the jumper).
  - 1 installed => 44cm (17")
  - not installed => 54cm (21")
- X8 => Sensitivity of the ambient light sensor (factory setting, 2-3 middle).

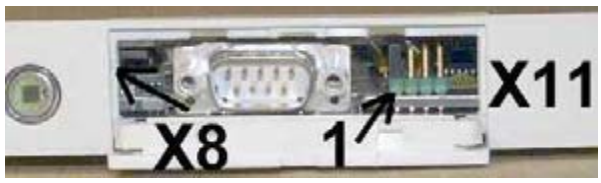


Fig. 2: Monitor size

Video Terminal Resistor / Cable Compensator

- Remove the rear wall of the housing

Remove the 2 screws on the rear wall, take the housing off towards the back.

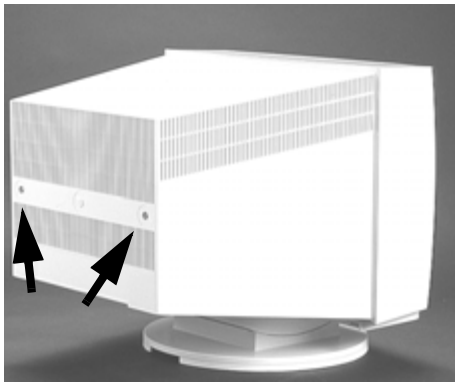


Fig. 3:

- Remove the top cover panel.

Remove the 9 screws, remove the top cover panel.

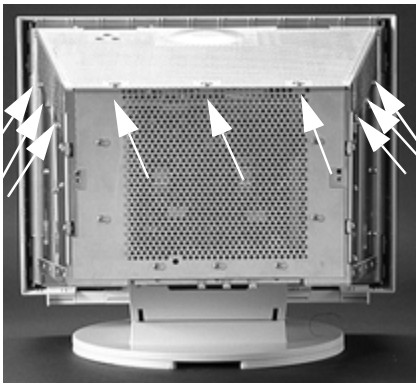


Fig. 4:

- Remove the rear cover panel.

Remove the 7 screws, remove the rear cover panel.

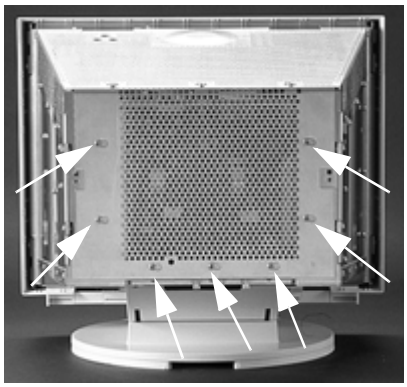


Fig. 5:

- Jumper positions.

The terminal resistors for the inputs on the video amplifier can be changed using jumpers.

- X4 => BAS input terminal resistor.
  - 1- 2 => ON
  - 2-3 => OFF
  - Standard (setting when shipped) ON
- X5 => H- Synch input terminal resistor.
  - 1- 2 => ON
  - 2- 3 => OFF
  - Standard (setting when shipped) OFF
- S1 cable compensator.
  - 1 => ON
  - 2 => OFF
  - Standard (setting when shipped) OFF

Fig. 6: Video terminal resistor / cable compensator

Installation of the cover panels is in the reverse of the above instructions.

Adjusting the Video Amplifier

General Remarks

- The maximum brightness and the maximum contrast are adjusted in the window (Adjustment => Video Amplifier). Adjustment can be made to these set values using the front control knobs (brightness/contrast) or by means of the ambient light sensor, when activated.
- The settings are always performed in the 0% field for brightness and in the 100% field for contrast. The exception is with Magic View; see the value table.
- Test image
  - **AXIOM Artis .....**

    We use the “Siemens” test pattern (it has larger measuring fields than the SMPTE test pattern).for H/C adjustment.

    Select zoom to magnify the fields again. Move the corresponding field (0% - 100%) to approx. the center of the image. Note: The hand symbol may not be in the measuring field (incorrect measurement)!

    Important:

    The window for the test pattern must always be fully opened in AXIOM ARTIS.. If the window values are/were changed, the “Patient” closed, the “new” values are saved!

    Open values:

    WC 2048

    WW 4094
  - The adjustment can be performed with the test image for the particular digital system or with the monitor multinorm test box. If the test box is used, pay attention to the correct “Norm” as well as to the BAS values!
  - HICOR / ACOM

    If the SMPTE test pattern is used, the test point for the black value is at the right edge of the screen, outside the SMPTE test image.
  - Multistar TOP

    Use the black / white test image.
  - Multistar KK

    If the SMPTE test pattern is used, the zoom function must be used to obtain a sufficiently large black area for the measurement.
  - Monitor Mulitnorm Testbox.

    In the list box, the corresponding system (e.g. HICOR, ...) must be selected.

    The black/white test image must be used for the adjustment.

    If HICOR is selected (also general) pay attention to the video level: change the B-signal to 650mV and the A-signal to 50mV (with 1V BAS).
- Warm-up phase
  - The monitor must be left on for at least 20 minutes (warm-up behavior of the picture tube). If the time is too brief, it will not be possible to make a selection in the screen.

Adjustment

NOTE

Adjustment sequence:

The basic setting must have been performed!

The brightness / contrast adjustment is performed using the front buttons or in the SSW.

The bypass adjustment must be performed only if the “emergency mode” and thus generally for a different norm for the “normal mode”

NOTE

Ambient light sensor:

The ambient light sensor is switched off automatically by the SW when the window is opened for the adjustment of the brightness / contrast basic setting and for bypass.

When "Brightness / Contrast Adjustment using the front buttons or in the SSW" is performed, the ambient light sensor must be switched off in => Configuration => Power down & Ambient light sensor.

Brightness / Contrast Basic Setting

- The monitor must be on for at least 20 minutes"
- Select the test pattern for the particular system.
- Select the “Adjustment video amplifier” window in the SSW under:

  => Adjustment => Video amplifier
- Select the Cutoff‘s button (cutoff is performed).
- Select the Max. Background button. Using the slider for maximum background, set the value from the table (Tab. 3 / p. 22) for Max. Background.

  Note: A dark monitor image is generated by selecting the button.
- Select the Max. Contrast button.
  - Using the slider for Maximum Contrast, set the value for Max. Contrast in the 100% white field from the table (Tab. 3 / p. 22).
  - Using the Brightness slider, set the value for Max. Brightness in the 0% field from the table (Tab. 3 / p. 22).
  - If necessary, repeat both adjustments.

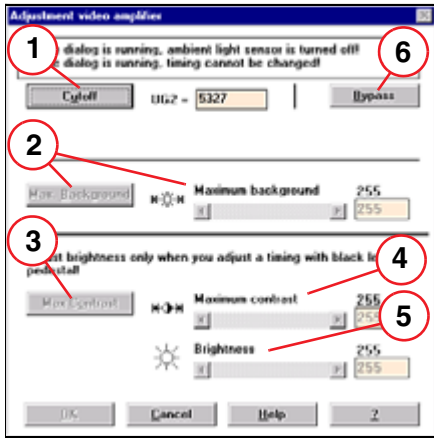


Fig. 7: Adjustment Brightness/Contrast

Pos. 1	Button for Cutoff
Pos. 2	Button and slider for max. Background
Pos. 3	Button for Contrast adjustment
Pos. 4	Slider for maximum Contrast adjustment
Pos. 5	Slider for Brightness adjustment
Pos. 6	Button for Contrast adjustment

Brightness / Contrast Adjustment using the Front buttons or in the SSW

Tab. 1 Front buttons

- Using the front buttons, or if if the front buttons are blocked, in the SSW under:

  => Configuration => Brightness and Contrast

  the final brightness / contrast values are adjusted. For the current values, see the applicable IQAP/IQ.

  - Set the Contrast minimum slider to 0 (not used).
  - Using the slider for Maximum background, set the value for brightness from the table (Tab. 3 / p. 22).
  - Using the slider for Maximum contrast, set the value for contrast from the table (Tab. 3 / p. 22).
  - If necessary,repeat both adjustments.

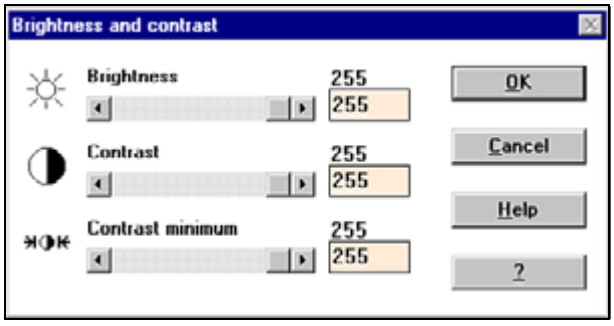


Fig. 8: int. Brightness / Contrast

Bypass Adjustment

Tab. 2 Bypass

- If a bypass mode is being used at the particular system (as a rule, this is the emergency mode), the brightness / contrast values for this mode must be adapted to the “Normal mode”.

  This is done in the SSW under:

  => Adjustment => Video amplifier => Bypass

  - Insert the TV dynamic test.

    In the “Normal mode”, measure the luminous intensity values in the 2L and 5R fields using the Mavo monitor and make a note of the values.
  - In the “Bypass mode”, use the slider for Maximum background to set the value in the 5R field and the slider for Maximum contrast to set the value in the 2L field to the values that were noted.
  - If necessary, repeat both adjustments.

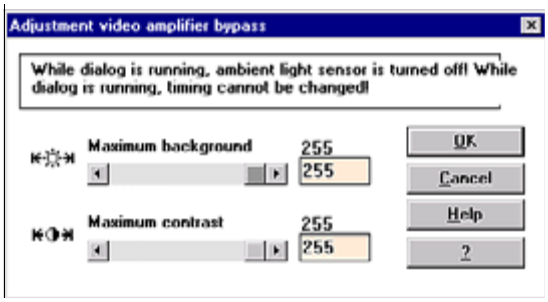


Fig. 9: Bypass Window

Table for H/C Values

NOTE

Adjust the values that have been set.

The gradations, 5% in the 0% field, as well as 95% in the 100% field must be visible; if necessary, use the complete tolerance range!

Tab. 3 B/C Value

System	Max. Background (cd/m^2)	max. Contrast		Brightness / Contrast Adjustment using the front buttons or in the SSW	
		Max. Contrast (cd/m^2)	Max. Brightness (cd/m^2)	Contrast (cd/m^2)	Brightness (cd/m^2)
Important: see [1] Card Systems (prior to AXIOM) ACOM	**3 ± 0,3**	**560 ± 30**	**1 ± 0,2**	**500 ± 20**	**0,8 ± 0,1**
Important: see [1] Multispot TOP Neurostar TOP Angiostar TOP Multistar KK	**3 ± 0,3**	**560 ± 30**	**1 ± 0,2**	**400 ± 20**	**0,5 ± 0,15**
Polystar TOP Fluorospot H Systems Fluorospot TOP (1k/2k) Fluorospot Compact AXIOM Artis MP	**3 ± 0,3**	**400 ± 20**	**1 ± 0,1**	**260 ± 10**	**0,5 ± 0,15**
Magic VIEW => in the 90% or 20% field of the SMPTE test pattern!	**3 ± 0,3**	**229 ± 5**	**9 ± 0,5**	**229 ± 5**	**9 ± 0,5**
Leonardo (WS)	**3 ± 0,3**	560 **± 30**	**1 ± 0,1**	**260 ± 10**	**0,5 ± 0,15**
AXIOM Artis FA / FC / BA / BC	**3 ± 0,3**	**450 ± 20**	**1 ± 0,1**	**400 ± 20**	**0,5 ± 0,1**

1. The monitor with Part No. 74 11 726 is not used in this application (max. luminous intensity = 450 cd/m2)

General Remarks	Warning notes expanded.
Adjustment of max. brightness / contrast	Adjustment / Configuration expanded.

24 Changes to Previous Version